

Translation

PATENT COOPERATION TREATY

REC'D 25 AUG 2004


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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>P2002214E</b>		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/CN03/00072</b>	International filing date (day/month/year) <b>27.JAN.2003 (27.01.2003)</b>	Priority date (day/month/year) <b>18.APR.2002 (18.04.2002)</b>	
International Patent Classification (IPC) or national classification and IPC <b>IPC7 H02M3/28 H02M7/12 H02H7/10</b>			
Applicant <b>JIANG Tao ET-AL</b>			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and /or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty ,inventive step and industrial applicability</p> <p>IV <input checked="" type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2)with regard to novelty ,inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international opplication.</p>			
Date of submission of the demand <b>19.SEP.2003 (19.09.2003)</b>		Date of completion of this report <b>11.AUG.2004 (11.08.2004)</b>	
Name and mailing address of the IPEA/CN 6 Xitucheng Rd., Jimen Bridge, Haidian District, 100088 Beijing, China Facsimile No. 86-10-62019451		Authorized officer  Telephone No.86-10-62084882	

## I. Basis of the report

## 1. With regard to the elements of the international application:

☒ the international application as originally filed☐ the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the claims:

Nos \_\_\_\_\_, as originally filed

Nos \_\_\_\_\_, as amended (together with any statement) under Article 19

Nos \_\_\_\_\_, filed with the demand

Nos \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the drawings:

sheets/fig \_\_\_\_\_, as originally filed

sheets/fig \_\_\_\_\_, filed with the demand

sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed

pages \_\_\_\_\_, filed with the demand

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. with regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages \_\_\_\_\_☐ the claims No. \_\_\_\_\_☐ the drawings, sheets/fig \_\_\_\_\_5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

## IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

The application includes several inventions: Claim 1-9, 11 protect green switch power supplies with standby function; Claim 10 protects a single switch power supply circuit; Claim 12-15 protect a method for preventing switch power supply current from overload and saturation and its switch power supply and IC; Claim 16-19 protect a digital processing high quality active power factor correction method and its correction device and IC. There is (are) no uniform or corresponding special technical feature(s) between the claim groups, so the present application suffers under non-unity.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos.

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement:

Novelty (N)	Claims	1-9,11,16-19	YES
	Claims	10,12-15	NO
Inventive step (IS)	Claims	1-9,11,16-19	YES
	Claims	10,12-15	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

The application relates to a switch power supply.

The relevant documents cited in the report are :

D1:CN-C-1063296

D2:WO-A1-94/22207

1.1. Claims 1-9, 11, 16-19 have novelty under PCT Article 33(2).

1.2. D1 discloses the undermentioned characters (see the figure 4): a switch power supply circuit 4 includes a single end forward output and at least a single end flyback output, and the single end forward output and the single flyback output are in a routine. The all technic characters are disclosed in D1, so Claim 10 lacks novelty under PCT Article 33(2).

1.3. D2 discloses the undermentioned characters (see the description page 3, line 22 to page 7, line 11 and figures 1, 2, 4): a method for limiting the output current of a switched-mode power supply of flyback type in overload situations, the output current is limited by adjusting the on/off ratio of the primary circuit by means of a control circuit 13, the control circuit 13 is UC3843 and detects the current information of the switch. And the undermentioned characters are hidden in the control circuit 13 that whether the current exceeds the upper limit or not is detected, and when the the current exceeds the upper limit the adjusting signal or indirect adjusting error signal is produced to cause the duty ratio become small in the following or several cycles. Claim 12 is disclosed in D2 and lacks novelty under PCT Article 33(2).

1.4. D2 further discloses the undermentioned characters: a converting circuit including switching SW, a feedback circuit consisting of the differential amplifier 15, the control circuit 13 includes PWM circuit, an auxiliary circuit consisting of the resistor Rcs and the other circuit in the control circuit 13. The protecting circuit of the auxiliary circuit includes the current sample circuit (consisting of the resistor Rcs) of the switch. And the undermentioned characters, the upper current detecting circuit, the adjusting circuit adjusting or indirectly adjusting the error signal based on the output signal of the detecting circuit, are hidden in the control circuit 13. So Claim 13 is disclosed in D2 and lacks novelty under PCT Article 33(2).

1.5. D2 discloses the all characters of Claim 14. Claim 14 lacks novelty under PCT Article 33(2).

1.6. The characters of Claims 15 are hidden in D2. Claim 15 lacks novelty under PCT Article 33(2).

2. It is not obvious to those skilled in the art to obtain the solution of claims 1-9, 11, 16-19, therefore claims 1-9, 11, 16-19 have inventive step under PCT Article 33(3).

3. claims 1-19 have industrial applicability under PCT Article 33(4) because the solution claimed can be made and used in the industry.

# 专利合作条约

## PCT

### 国际初步审查报告 (PCT 条约 36 和细则 70)

REC'D 25 AUG 2004

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申请人或代理人的档案号 <b>P2002214E</b>	关于后续行为 参见“传送国际初步审查报告的通知”(PCT/IPEA/416 表)	
国际申请号 <b>PCT/CN03/00072</b>	国际申请日(日/月/年) <b>27.1 月 2003(27.01.03)</b>	优先权日(日/月/年) <b>18.4 月 2002(18.04.02)</b>
国际专利分类(IPC)或者国家分类和 IPC 两种分类 <b>IPC7 H02M3/28 H02M7/12 H02H7/10</b>		
申请人 <b>姜涛 等</b>		

1. 本国际初步审查单位已作出国际初步审查报告并依照条约第 36 条将其传送给申请人。
2. 本报告共计 4 页, 包括扉页。
- ☐ 本报告还有附件, 即修改后的并且作为本报告基础的说明书修改页、权利要求书修改页和/或附图修改页, 和/或对本国际初步审查单位所作出的更正页(见 PCT 细则 70.16 和行政规程 607)。
- 这些附件共计        页

3. 本报告包括关于下列各项的内容:

- I ☒ 报告的基础
- II ☐ 优先权
- III ☐ 不作出关于新颖性、创造性和工业实用性的意见
- IV ☒ 缺乏发明的单一性
- V ☒ 按条约 35(2)关于新颖性、创造性或工业实用性的推断性意见; 支持这种意见的引证和解释
- VI ☐ 引用的某些文件
- VII ☐ 国际申请中的某些缺陷
- VIII ☐ 对国际申请的某些意见

提交要求书的日期 <b>19.09 月 2003(19/09/03)</b>	完成本报告的日期 <b>10.08 月 2004(10/08/04)</b>
国际初步审查单位名称和地址 <b>IPEA/CN</b> <b>中国北京市海淀区西土城路 6 号(100088)</b> 传真号: 86-10-62019451	授权官员  电话号码: 86-10-62084882

## I. 报告的基础

## 1. 关于国际申请中各个部分: \*

☒ 原始提交的国际申请。

☐ 说明书, 第 \_\_\_\_\_ 页, 原始提交的,  
第 \_\_\_\_\_ 页, 要求书提交的,  
第 \_\_\_\_\_ 页, \_\_\_\_\_ 的信件提交的。

☐ 权利要求, 第 \_\_\_\_\_ 项, 原始提交的,  
第 \_\_\_\_\_ 项, 条约第 19 条修改的(附有说明),  
第 \_\_\_\_\_ 项, 要求书提交的。  
第 \_\_\_\_\_ 项, \_\_\_\_\_ 的信件提交的。

☐ 附图, 第 \_\_\_\_\_ 页, 原始提交的。  
第 \_\_\_\_\_ 页, 随要求书提交的,  
第 \_\_\_\_\_ 页, \_\_\_\_\_ 的信件提交的。

☐ 说明书中的序列表部分  
第 \_\_\_\_\_ 页, 原始要求提交的,  
第 \_\_\_\_\_ 页, 随要求书提交的,  
第 \_\_\_\_\_ 页, \_\_\_\_\_ 的信件提交的。

## 2. 关于所使用的语言, 除本项下另有说明外, 本国际初步审查单位所获得的或者已向本国际初步审查单位提交的上述所有部分, 所使用的语言均为提交本国际申请时所使用的语言。

本国际初步审查单位所获得的或向本国际初步审查单位提交的这些部分所使用的语言是 \_\_\_\_\_,  
这种语言是

- ☐ 为了国际检索而提交的译本所使用的语言(细则 23.1(b))。
- ☐ 本国际申请公布时所使用的语言(细则 48.3(b))。
- ☐ 为了国际初步审查而提交的译本所使用的语言(细则 55.2 和/或 55.3)。

## 3. 关于本国际申请中所公开的任何核甙酸和/或氨基酸的序列, 本国际初步审查是根据下面的序列表进行的:

- ☐ 国际申请中所包含的书写形式的序列表。
- ☐ 与国际申请同时提交的计算机可读形式的序列表。
- ☐ 后来以书写形式向本国际初步审查单位提交的序列表。
- ☐ 后来以计算机可读的形式向本国际初步审查单位提交的序列表。
- ☐ 已提交了关于后来提交的书写形式的序列表没有超出原始提交的国际申请所公开的范围的说明。
- ☐ 已提交了关于以计算机可读的形式记载的信息是与书写形式的序列表相同的说明。

## 4. 修改删除了以下内容:

☐ 说明书, 第 \_\_\_\_\_ 页

☐ 权利要求, 第 \_\_\_\_\_ 项

☐ 附图, 第 \_\_\_\_\_ 页, 图 \_\_\_\_\_

5. ☐ 由于(某些)修改被认为超出了原始公开的范围, 如补充栏所示, 因此本报告是按照如同没有修改的情况作出的(细则 70.2(c)). \*\*

\* 按照条约第 14 条答复通知时向受理局提交的替换页, 在本报告中被称为“原始提交的”, 这些替换页不作为本报告的附件, 因为它们没有包含修改(细则 70.16 和 70.17)。

\*\* 任何包含这种修改的替换页, 都必须在第 1 项中指明, 并作为本报告的附件。

IV. 缺乏发明的单一性

1. 在答复限制权利要求或者缴纳附加费的通知(PCT/IPEA/405 表)时, 申请人:

- ☐ 已经限制了权利要求。  
☐ 已经缴纳了附加费。  
☐ 已经缴纳了附加费, 并提出了异议。  
☐ 既没有限制权利要求, 也没有缴纳附加费。

2. ☒ 本国际初步审查单位认为本申请不满足发明单一性的要求, 并且依照细则 68.1 决定不要求申请人限制权利要求或缴纳附加费。

3. 按照细则 13.1、13.2 和 13.3 的规定, 本国际初步审查单位认为发明单一性的要求

- ☐ 已得到满足。  
☒ 没有得到满足, 理由如下:

本申请包括多项发明: 权利要求 1-9, 11 为含待机功能的绿色开关电源; 权利要求 10 为单端开关电源电路; 权利要求 12-15 为防止开关电源电流过载和饱和的方法、开关电源装置及 IC; 权利要求 16-19 为数字处理高品质有源功率因数校正方法、校正装置及 IC。其中各组权利要求之间没有相同的或者相应的特定技术特征, 因此不具备单一性。

4. 因此, 在制定这份报告的过程中, 国际初步审查的主题是国际申请中的下列部分:

- ☒ 全部。  
☐ 与权利要求 \_\_\_\_\_ 有关的部分。

## 国际初步审查报告

国际申请号

PCT/CN03/00072

## V. 按条约 35 条(2)关于新颖性、创造性或工业实用性的推断性意见；支持这种意见的引证和解释

## 1. 意见

新颖性(N)	权利要求	1-9, 11, 16-19	是
	权利要求	10, 12-15	否
创造性(IS)	权利要求	1-9, 11, 16-19	是
	权利要求	10, 12-15	否
工业实用性(IA)	权利要求	1-19	是
	权利要求		否

## 2. 引证和解释(细则 70.7)

本申请涉及一种开关电源。

以下是本报告中涉及的对比文件：

D1:CN-C-1063296

D2:WO-A1-94/22207

1.1.权利要求 1-9,11, 16-19 具有 PCT 条约第 33 条第(2)款提出的新颖性。

1.2.D1 公开了下述技术特征(参见说明书附图 4)：开关电源电路 4，包括一路单端正激式输出，和至少一路单端反激式输出，其中单端正激式输出和单端反激式输出同路。由此可见，权利要求 10 的全部技术特征被 D1 所公开，权利要求 10 不具备 PCT 条约第 33 条第(2)款提出的新颖性。

1.3.D2 披露了以下技术特征(参见说明书第 3 页第 22 行到第 7 页第 11 行及说明书附图 1, 2, 4)：一种反激式开关电源在过载情况下限制输出电流的方法，输出电流通过调节控制电路 13 调节初级电路的导通关断率来进行限制，控制电路 13 为一 UC3843，其检测功率管的电流信息，并且检测该电流是否超过上限电流，若超过上限电流，则产生调整信号调整或间接调整误差信号，使得在下一个或几个脉冲调制周期内，占空比变小引含在该控制电路 13 的功能中。因此权利要求 12 的全部技术特征被 D2 所公开，不具有 PCT 条约第 33 条第(2)款提出的新颖性。

1.4.D2 还披露了以下技术特征：包括功率管 SW 的变换电路，由差动放大器 15 等组成的反馈电路，控制电路 13 中包括 PWM 电路，由电阻 Rcs 和控制电路 13(为 UC3843)中除 PWM 电路及驱动电路以外的电路组成的辅助电路，该辅助电路的保护电路包括依次相连的功率管的电流采样电路(通过电阻 Rcs 实现)，上限电流检测电路，根据该检测电路的输出信号执行调整或间接调整误差信号的调整电路引含在控制电路 13 中，因此权利要求 13 的全部技术特征被 D2 所公开，不具有 PCT 条约第 33 条第(2)款提出的新颖性。

1.5.D2 已经披露了权利要求 14 的全部技术特征。因此权利要求 14 不具有 PCT 条约第 33 条第(2)款提出的新颖性。

1.6.权利要求 15 的技术特征已引含在 D2 中。因此权利要求 15 不具有 PCT 条约第 33 条第(2)款提出的新颖性。

2.权利要求 1-9, 11, 16-19 具有 PCT 条约第 33 条第(3)款提出的创造性。因为这些权利要求的技术方案是非显而易见的。

3.权利要求 1-19 具有 PCT 条约第 33 条第(4)款提出的工业实用性。因为其可在工业上进行制造和使用。